

USSR

UDC 547.26'118

TOROPOVA, V. F., CHERKASOV, R. A., SAVEL'YEVA, N. I., GRIGOR'YEVA, L. A.,  
SHERGINA, I. V., OVCHINNIKOV, V. V., and PUDOVIK, A. N., Kazan' State  
University imeni V. I. Ul'yannov-Lenin

"Study of Stability of Complexes of Silver, Nickel and Cobalt Ions With  
Phosphorus Dithioacid Derivatives"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 8, Aug 71, pp 1673-1676

**Abstract:** A study was made of the composition and stability of complex compounds of silver ions with a series of phosphorus dithioacid derivatives, as well as complexes of nickel and cobalt ions with diethyldithiophosphoric acid by the potentiometric method in a 90-percent ethanol-aqueous solution at an ionic strength of 0.3 and a temperature of 25°. Stability constants ( $\log \beta_2$ ) are determined and correlated with constants for substituents at the phosphorus atom in the molecule of the ligand, particularly for the 2,3-butylene glycol substituent.

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UDO 541.49 + 547.241

TOROPOVA, V. F., CHERKASOV, R. A., SAVEL'YEVA, N. I., and PUDOVIK, A. N., Kazan' State University imeni V. I. Ul'yanov-Lenin, Kazan, Ministry of Higher and Secondary Specialized Education RSFSR

"Effect of Substituents in Molecule of Phosphorus Dithioacids on Stability of Their Complex Compounds With Mercury Ions"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 5, May 70, pp 1043-1046

Abstract: The authors studied the effect of substituents at the phosphorus atom on the stability of complex mercury compounds with a series of phosphorus dithioacids of the type  $(RO)_2PSSH$ ,  $(RO)R'PSSH$  and  $R_2PSSH$  in water-ethanol solutions. The complexing was studied by the potentiometric method with a mercury indicator electrode. The stability constants ( $\beta$ ) of the complex compounds were determined, and the redox potentials of some systems were measured. It is shown that  $\log \beta_2$  can be correlated with the sum of substituent constants at the phosphorus atom. In the reaction series under consideration ( $n=16$ )  $\rho = 2.60$ ,  $r = 0.905$ .

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1/2 036

UNCLASSIFIED

PROCESSING DATE--11SEP70

TITLE--ROLE OF STRESSES IN ACCELERATING THE PENETRATION OF MOLTEN METALS  
INTO SOLID METALS -U-

AUTHOR--CHAYEVSKIY, M.I., TOROPOVSKAYA, I.N., POPOVICH, V.V., DATSISHIN,

A.M.

COUNTRY OF INFO--USSR

SOURCE--FIZ. KHM. MEKH. MATER. 1970, 5(6), 692-698

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--LIQUID METAL, ZINC, COPPER, BISMUTH, LITHIUM, IRON, METAL  
STRESS, INTERNAL STRESS, METAL SURFACE IMPREGNATION, PLASTIC DEFORMATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0625

CIRC ACCESSION NO--AP0105604

STEP NO--UR/0369/70/005/006/0692/0698

UNCLASSIFIED

2/2 036

CIRC ACCESSION NO--AP0105604

UNCLASSIFIED

PROCESSING DATE--11SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF APPLIED STRESSES ON THE RATE AT WHICH MOLTEN METAL PENETRATES SOLID METAL DEPENDS ON THE INTERACTION OF THE METALS WHICH IN TURN IS DETERMINED BY THEIR STRUCTURE. REGULAR DIFFUSION OF MOLTEN INTO SOLID METALS IS LEAST AFFECTED BY STRESSES OF PLASTIC DEFORMATION. IT FOLLOWS THAT ACCELERATION OF DIFFUSION IS LEAST WHEN THE 2 METALS FORM SOLID SOLNS. OR INTERMETALLIC COMPODS. WHEN THIS IS NOT THE CASE APPLIED STRESSES WILL ENHANCE DIFFUSION. THESE CONTENTIONS WERE TESTED BY EXPTS. ON THE DIFFUSION OF MOLTEN ZN INTO CU, MOLTEN BI INTO CU, AND MOLTEN LI INTO ARMCO FE.

UNCLASSIFIED

Materials

USSR

UDC 662.997.621.316.344.4

TOROPTSEVA, T. N., BAYBAKOVA, N. N., GREBELEYUK, I. I., BLAGOVESHCHENSKAYA,  
I. E., All-Union Order of the Red Banner Scientific Research Institute of  
Current Sources

"An Investigation of the Behavior of Silicone Polymer Materials Under the  
Operating Conditions of Solar Power Installations"

Tashkent, Geliotekhnika, No 6, 1970, pp 38-39

**Abstract:** A report is given on an analysis and operational testing of three new types of bonding material - silmethylene, polysiloxysilazane, and silazane, with regard to their use in solar power installations. It is found that L-24-7 polysiloxysilazane varnish and L-24-7 silazane varnish have favorable long-time aging properties against light and weather, stability to abrupt temperature changes, which, in conjunction with good properties of adhesion to concentrators and semiconductors, mechanical strength and resistance to solvents, qualify them for use as protective coatings for the workings surfaces of photocells and concentrators.

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172 039  
TITLE—ELECTRON PHONON OPTIMIZATION OF SOME POLYMERS -U-  
UNCLASSIFIED PROCESSING DATE--30OCT70

AUTHOR—(04)—GINDIN, L.G., RAVICH, I.YA., TOROPTSEVA, T.N., LIDORENKO, N.S.  
COUNTRY OF INFO—USSR

SOURCE—DOKL. AKAD. NAUK SSSR 1970, 190(6), 1374-7  
DATE PUBLISHED—70

SUBJECT AREAS—CHEMISTRY

TOPIC TAGS—ELECTRON, PHONON, PYROMELLITIC ACID, POLYMER, HEAT  
CONDUCTIVITY, SILVER, NICKEL, COMPLEX COMPOUND, THERMAL STABILITY

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED

PROXY REEL/FRAME—2000/1087

STEP NO—UR/0020/70/190/006/1374/1377

CIRC ACCESSION NO—AT0124744

UNCLASSIFIED

039

CIRC ACCESSION NO--AT0124744

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT—(U) GP-0 ABSTRACT. THE ADDN. OF AGOAC, NI(OAC)<sub>2</sub> SUB2, CR(OAC) SUB3, OR BE(OAC) SUB2 TO POLYPYROMELLITIIDE (II) FILMS (PREPD. BY POLYCONDENSING (4, H SUB2 NC SUB6 H SUB4) SUB2) WITH PYROMELLITIC DIANHYDRIDE AND HEATING THE POLYAMIDE TO 300DEGREES) INCREASED THEIR HEAT COND. COEFF. (LAMBDA), WITHOUT APPRECIABLY INCREASING THE ELEC. COND. COEFF. (SIGMA). WHEN THE POND. AG, OR NI WERE ADDED TO I BOTH LAMBDA AND SIGMA INCREASED. HEATING SALT FILLED I DECOMPD. THE SALTS GIVING METAL GLOBULES SIMILAR TO 100 ANGSTROM IN DIAM. SEPD. BY 300-500 ANGSTROM DISTANCES. THE RELATION BETWEEN LAMBDA AND METAL CONCN. (C) IS LAMBDA IS SIMILAR TO C PRIMEALPHA (N. S. LIDORENKO, ET AL. 1969). ALSO SIGMA EQUALS SIGMA SUB0 EXP(E-2KT), WHERE E IS THE ACTIVATION ENERGY. THE SALTS DECOMPD. AT LOWER TEMP. THAN THE CHELATES SUCH AS II, WHICH IN CASE OF AGOAC WAS STABLE SMALLER THAN OR EQUAL TO 330DEGREES, I.E., ABOVE I PREPN. TEMP.

UNCLASSIFIED

"APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002203320011-7

UNCLASSIFIED  
TITLE--ON THE MEASUREMENTS OF THE HYDROXYL EMISSION IN TWILIGHT -U-  
PROCESSING DATE--02 OCT 70

AUTHOR--(G2)-TARANOVA, O.G., TORDSHELIOZE, T.I.

COUNTRY OF INFO--USSR

SOURCE--RAZDEL IV, POLYARNYYE SIYANIYA I SVECHENIYE NOSHNUGO NEBA, 1970,  
NR 18, PP 26-32  
DATE PUBLISHED-----70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--TWILIGHT, HYDROXYL RADICAL, MEASUREMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0122

CIRC ACCESSION NO--AP011451B

STEP NO--DR/3307/70/000/018/0026/0032

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002203320011-7"

"APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002203320011-7

CIRC ACCESSION NO--AP0114518  
U//  
ABSTRACT/EXTRACT--(U) CP-0-

UNCLASSIFIED

PROCESSING DATE--02OCT70

ABSTRACT. THE PAPER DESCRIBES THE METHODS USED FOR PROCESSING THE HYDROXYL EMISSION DATA OBTAINED IN TWILIGHT OBSERVATIONS. VARIATIONS IN T SUBROT AND I SUBOH IN THE OH (5.2) AND OH (4.1) BANDS OCCURRING IN TWILIGHT ARE SHOWN AS OBSERVED IN ABASTUMANI AND ZVENIGOROD.

UNCLASSIFIED

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APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002203320011-7"

USSR

UDC 542.947+547.526.554

BABAYAN, A. T., TAGMAZYAN, K. Ts., TOROSYAN, G. Q., Institute of Organic  
Chemistry of the Academy of Sciences of the Armenian SSR, Yerevan

"Cyclization-Cleavage of Quaternary Ammonium Salts"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol XXIV, No 12, 1971, pp 1077-1078

**Abstract:** Quaternary ammonium salts containing an allyl group [A. T. Babayan, et al., Arm. Khim. Zh., Vol 19, No 1, 678, 1966] or a propargyl group [A. T. Badayan, et al., DAN Arm. SSR, Vol 48, No 1, 54, 1969] along with the pent-4-en-2-yne group form dihydroisoindolinium and isoindolinium salts in an aqueous alkali. A scheme is proposed for this reaction by which ring formation is preceded by protropic isomerization of the pent-4-en-2-yne group with the formation of an  $\alpha$ -allene group. It was proposed that the catalytic effect of the alkali occurred in this stage. As a result of prolonged heating of a dimethylformamide solution of dimethylpropargylammonium bromide (melting point 103-104°) in boiling water, dimethyldihydroisoindolinium bromide was obtained in almost quantitative yield. The structure of the cyclic product was proved by alkaline cleavage.

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USSR

UDC 616.981.42+591.147+445

SAKANYAN, S. Sh.; TOROSYAN, S. Ye.; BUNATYAN, L. O.; Armenian  
Scientific Research Institute of Animal Husbandry and Veterinary  
Science and Yerevan Veterinary Institute

"Role of the Adrenals, Pancreas, and Gonads in the Mechanism of  
Cerebrocortical Influence on Postvaccinal Immunity Against  
Brucellosis"

Yerevan, Biologicheskiy Zhurnal Armenii, No 6, 1971, pp 75-77

Abstract: Earlier experiments showed that moderate amounts of caffeine stimulate postvaccinal immunity against brucellosis and that the hypophysis and thyroid play an important part in the process. In rabbits vaccinated against brucellosis and then adrenalectomized, antibody formation was inhibited and phagocytosis by reticuloendothelial cells decreased regardless of whether or not animals received caffeine, i.e., elimination of adrenal function blocked the effect of caffeine. Thus, it would appear that the adrenals are involved in the mechanism of transmission of nerve impulses (stimulated by caffeine) to the

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USSR:

SAKANYAN, S. Sh., et al, Biologicheskiy Zhurnal Armenii, No 6,  
1971, pp 75-77

organs responsible for the development of immunity. The pancreas  
and gonads, however, do not participate in the process.

2722

Immunology

USSR

UDC 616.981.42+591.481.2

SAKANYAN, S. Sh., TOROSYAN, S. Ye and BUNATYAN, L. O. Armenian Scientific Research Institute of Animal Husbandry and Veterinary Science, Yerevan Zoo-veterinary Institute

"The Effect of Caffeine on the Effectiveness of Brucellosis Vaccination during Inhibition and Stimulation of Pituitary Function"

Yerevan, Biologicheskiy Zhurnal Armenii, Vol 23, No 5, May 70, pp 94-96

**Abstract:** The effect of caffeine on the effectiveness of brucellosis vaccination was studied in rabbits with blocked and activated pituitary function. One group of rabbits was given cortisone (150 mg/kg) once daily for 5 days. A second group was given caffeine (1.0 ml of 1% solution). A third group was immunized after subcutaneous injection of somatotropic hormone, in a dose of 1.2 g/kg. A fourth group served as controls for caffeine and a fifth as controls for immunization. After 30 days, Brucella cultures were subcutaneously injected into all animals. Experiments indicated that immunity was more pronounced when caffeine was administered. It was concluded that the nerve stimulus produced by caffeine is transmitted to other organs generating immunity through the pituitary gland.

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USSR

SAKANYAN, S. Sh., TOROSYAN, S. Ye., MIKAYELYAN, M. G. and TEVOSYAN, E. Ye.

"The Role of the Thyroid in the Formation of Immunity against Swine Fever and  
Rabbit Brucellosis"

Tr. Arm. n.-i. in-ta zhivotnovodstva i veterinarii (Works of the Armenian Scientific Research Institute of Livestock Raising and Veterinary Medicine), 1967, No 9, pp 439-450 (from RZh-Zhivotnovodstvo i Veterinariya, No 1, Jan 70, Abstract No 1.58.408)

Translation: Ten days after thyroidectomy, three young pigs were given 0. 1 g of thyroïdin daily for 4 days before and 20 days after immunization with crystal violet vaccine (twice at 10-day intervals). The strength of immunity was determined by control infection. Experiments showed that complete exclusion of thyroid function or injection of thyroid hormone had no appreciable effect on post vaccinal immunity against swine fever. Experiments on rabbits showed that thyroidectomy, creation of hyperthyroidism, or use of 6-methyluracil prevents the creation of postvaccinal serological areactivity in rabbits to brucellosis. Removal of the thyroid resulted in severe suppression of immunogenesis in rabbits. This was confirmed by seeding the viscera of vaccinated rabbits and guinea pigs with Brucella in the control infection. This difference in the 1/2

USSR

SAKANYAN, S. Sh., et al., Tr. Arm. n-i. in-ta zhivotnovodstva i veterinarii, 1967,  
9, pp 439-450 (from RZh-Zhivotnovodstvo i Veterinariya, No 1, Jan 70,  
Abstract No 1.58.408)

action of the thyroid on immunogenesis is due to the characteristics of viral  
and bacterial infections.

D. Petrachev

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USSR

UDC 669.883'891.053.28

NIKOLAYSHVILI, N. M., and TOROTADZE, I. I.

"Preliminary Technological Investigation of Rock Salt of the Avan Deposit  
in the Armenian SSR as Raw Material for the Production of Metallic Sodium  
and Calcium Chloride"

Tr. Kavkaz. in-ta mineral'n. syr'ya (Works of Caucasus Institute of Mineral  
Raw Materials), 1970, vyp 8(10), (pp 111-114) (from RZh-Metallurgiya, No 3,  
Mar 71, Abstract No 3 G176 by S. KRIVONOSOVA)

Translation: The article shows the possibility of obtaining sodium and calcium chloride from salt of the Avan deposit. The most acceptable process for this purpose is the vacuum-thermal process consisting in the reduction of metal chlorides during vacuum heating. Used as reducing agent are aluminum, Al-Si, and Fe-Si alloys with the addition of CaO to the charge. Optimum parameters of the metallic sodium production process: temperature 800-850°; charge composition NaCl 40%, FeSi 20%, CaO 32%; initial materials -- rock salt of the Avan deposit, lime from the Tsiteli-Tskaro deposit, and Fe-Si with specified chemical composition are dehydrated at 600° and held for 1 hour. The limestone is calcined at 1150° and held for 1.5 hour. 3 tables.  
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USSR

UDC: 681.327

TOROTENKOV, S. R.

"Memory Device"

USSR Authors' Certificate No 251004, Filed 5 May 1968, Published 30 January 1970 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 10, 1970, Abstract No 10B156P, by T. R.)

Translation: A patent is given for a memory unit with linear information selection and bit-position buses connected in a symmetrical bridge circuit containing a diode address commutator controlled by two decoders. In order to decrease noise during reading of information, half of the address windings and the corresponding diodes connected to any switch in the decoder are connected with the bit-position winding connected in one arm of the bridge circuit, while the other half of the address windings and diodes are connected to the same switch connected to the bit-position winding connected in the opposite arm of the bridge circuit.

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1/2 016

TITLE—ALLOYING OF STEEL -U- UNCLASSIFIED

PROCESSING DATE--20NOV70

AUTHOR—(S)—LITVINENKO, D.A., RUDCHENKO, A.V., TORPANOVA, G.A., LEYKIN,  
I.M., SHUSHLEBINA, B.A.

COUNTRY OF INFO—USSR

SOURCE—U.S.S.R. 263,637

REFERENCE—OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,  
DATE PUBLISHED—10FEB70

SUBJECT AREAS—MATERIALS

TOPIC TAGS—CHEMICAL PATENT, ALLOY STEEL, STEEL MANUFACTURING PROCESS,  
NITRIFICATION

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED

PROXY REEL/FRAME—3004/1821

CIRC ACCESSION NO—AA0132GB6

STEP NO—UR/0482/70/000/000/0000/0000

UNCLASSIFIED

2/2 016  
CIRC ACCESSION NO--AA0132086 UNCLASSIFIED  
ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. STEEL IS ALLOYED WITH N BY POURING  
A STREAM OF HOT METAL OVER STABLE METAL NITRIDES.

PROCESSING DATE--20NOV70

UNCLASSIFIED

USSR

UDC: 539.376

Sosnin, O. V., ~~Torshenov, N. G.~~, Novosibirsk

"Creep and Rupture of Type OT-4 Titanium Alloy in the 400-550°C Temperature Interval"

Kiev, Problemy Prochnosti, No 7, 1972, pp 55-59.

**Abstract:** Results are presented from experiments on creep and long-term strength of flat specimens of OT-4 alloy at 400, 450, 500 and 550°C. The regularity of the change in creep deformation  $\epsilon^*$  at the moment of rupture as a function of experimental duration and test temperature is demonstrated. An estimate is given of the time to rupture on the basis of the energy criterion for long-term strength.

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"APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002203320011-7

FILE--CREEP AND FAILURE OF THE OT-4 TITANIUM ALLOY AT A CONSTANT  
TEMPERATURE -U- UNCLASSIFIED

AUTHOR-(02)-SOSNIN, O.V., TORSHENOV, N.G. PROCESSING DATE--27NOV70

COUNTRY OF INFO--USSR

SOURCE--PROBLEMY PROCHNOSTI, VOL. 2, MAY 1970, P.28-32  
DATE PUBLISHED----70

SUBJECT AREAS--MATERIALS, METHODS AND EQUIPMENT

TOPIC TAGS--METAL CREEP, FATIGUE STRENGTH, TITANIUM ALLOY, TEST  
METHOD/(U)OT4 TITANIUM ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1439

CIRC ACCESSION NO--AP0135110

UNCLASSIFIED

STEP NO--UR/3663/70/002/000/0028/0032

APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002203320011-7"

2/2 031  
CIRC ACCESSION NO--AP0135110

UNCLASSIFIED

PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYSIS OF THE RESULTS OF CREEP AND FAILURE TESTS PERFORMED FOR A TITANIUM ALLOY AT A TEMPERATURE OF 500 DEG C. IT IS SHOWN THAT AT THE MOMENT OF FAILURE, THE VALUE OF THE SPECIFIC WORK DISSIPATED DURING THE CREEP PROCESS IS CONSTANT WITHIN THE STRESS RANGE STUDIED (10 TO 26 KGG PER SQ MM) AND IS INDEPENDENT OF THE LOADING HISTORY. IT IS ALSO SHOWN THAT THE INTENSITY OF THE PROCESS (IN THE SENSE OF DISSIPATION INTENSITY) DEPENDS UNIQUELY ON THE INSTANTANEOUS VALUES OF THE STRESSES AND DISSIPATED WORK.  
FACILITY: AKADEMIIA NAUK SSSR, INSTITUT GIRODINAMIKI NOVOSIBIRSK,  
USSR.

UNCLASSIFIED

USSR

SOSNIN, O. V., TORSHENOV, N. G.

UDC 539.376

"Creep and Destruction of the Titanium Alloy OT4 at Constant Temperature"  
Problemy Prochnosti, No 5, May, 1970, pp 28-32

**Abstract:** The results of experiments on the creep and destruction of titanium alloy OT-4 at a temperature of 500° C and stresses of 10 < σ < 26 kg force/mm<sup>2</sup> are presented. The experiments were carried out in three series. In the first series of experiments the load did not change until complete rupture of the specimen. The second series of experiments was carried out with interruptions during which the specimen was completely unloaded and was allowed to cool to room temperature. After several hours it was heated again, and at 500° C the initial load was reapplied. It was found that the interruption in the experiment did not affect the succeeding process of creep. In the third series of experiments the load was varied step-wise, the stress in the reloadings being defined each time as the ratio of the axial load to the initial cross-section area of the specimen. From the results of the third series of the experiments it follows that an equation of state should exist which links the intensity of the process in the sense of the power of dispersion to the value of the current

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SOSNIN, O. V., et al, Problemy Prochnosti, No 5, May, 1970, pp 28-32

stress and the dispersed work. This equation of state is given. On the basis of the third series of experiments, the conclusion may be drawn that the sum of all the load steps is equal to the critical value obtained from the experiments of the first and second series.

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UNCLASSIFIED  
PROCESSING DATE--18SEP70  
THE BLOOD OF PATIENTS WITH PEMPHIGUS -U-  
AUTHOR--(04)-TORSUYEV, N.A., ROMARENKO, V.N., ZAKHAROV, I.YA., SOROKA, V.R.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK DERMATOLOGII I VENEROLOGII, 1970, NR 3, PP 25-28.  
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TRACE ELEMENT, BLOOD CHEMISTRY, DERMATITIS, SILICON, ALUMINUM,  
TITANIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/1489

CIRC ACCESSION NO--AP0101573

STEP NO--UR/0206/70/000/003/0025/002#

UNCLASSIFIED

FILE ACCESSION NO--AP0101573  
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--18SEP70

ABSTRACT. THE CONTENT OF SILICON, ALUMINIUM AND TITANIUM WAS DETERMINED BY MEANS OF SPECTROCHEMICAL ANALYSIS IN THE WHOLE BLOOD OF 42 PATIENTS WITH PEMPHIGUS ACANTHOLYTICUS AND OF 31 PATIENTS WITH DERMATITIS HERPETIFORMIS DUHRING. THESE TRACE ELEMENTS PARTICIPATE ACTIVELY IN CONSTRUCTION OF EPITHELIAL AND CONNECTIVE TISSUE STRUCTURES OF THE SKIN, AND THEIR CONCENTRATION IN THE BLOOD IS CLOSELY CONNECTED WITH MORPHOLOGICAL CHANGES IN THE SKIN. IN THE BLOOD OF PATIENTS WITH DERMATITIS HERPETIFORMIS DUHRING THE CONTENT OF ALUMINIUM, TITANIUM AND ESPECIALLY SILICON IS REDUCED, SINCE THESE TRACE ELEMENTS ARE UTILIZED IN LARGE AMOUNTS FOR REHABILITATION OF TRANSITORY DISORGANIZATION OF CONNECTIVE TISSUE STRUCTURES. IN PATIENTS WITH PEMPHIGUS ACANTHOLYTICUS THE CONTENT OF THESE TRACE ELEMENTS, ESPECIALLY OF SILICON, IS MARKEDLY INCREASED WHICH IS EXPLAINED BY THEIR INCREASED RELEASE DURING DEGENERATION OF THE EPIDERMIS. IN PEMPHIGUS ACANTHOLYTICUS THE INTERCELLULAR CEMENTING MATERIAL IS DISSOLVED, AND SILICON MAY POSSIBLY BE ONE OF THE IMPORTANT COMPONENTS OF THE LATTER.

UNCLASSIFIED

*Immunology*

USSR

UDC 619-002.73-085.371-039.71(47)

TORSUYEV, N. A., Donetsk, POGORELOV, V., and DAVLEKAMOVA, F., Astrakhan and KHARABADZHAKHOV, K., Rostov-na-Donu

*"Experience with Active Immunoprophylaxis of Leprosy with BCG Vaccine in the USSR"*

Moscow, Vestnik Dermatologii i Venerologii, No 1, 1970, pp 76-78

**Abstract:** Prophylactic inoculation of children and adults with BCG vaccine in recent years has produced excellent results in protecting the population against leprosy in various endemic areas of the USSR. For example, in the Muynak region of the Kara-Kalpak ASSR, only 1 or 131 children inoculated in 1967 with BCG vaccine developed a tuberculous element (which soon regressed), whereas 15 of 231 nonvaccinated children contracted the disease (both groups of children had leprosy parents). Some 70,000 persons in the Kazakh SSR were vaccinated and followed up for 5-10 years. An average of 197 new cases were detected annually in this republic from 1956 to 1960, but only 74 cases from 1960 to 1965. These data confirm the experience gained with BCG vaccine in other parts of the world, i.e., the incidence of leprosy is much lower in vaccinated populations than in nonvaccinated ones.

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USSR

TORSUYEV, N. A., et al., Moscow, Vestnik Dermatologii i Venerologii,  
No 1, 1970, pp 76-78

The authors strongly recommend the compulsory vaccination of all  
newborn infants in endemic zones, with reimmunization at definite  
intervals of time thereafter. The vaccine produces no complications.

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USSR

UDC 669.71:539.53

KURILO, YU. P., SOMOV, A. I., TORTIKA, A. S., and CHERNYY, O. V.  
Physicotechnical Institute, Academy of Sciences Ukrainian SSR

"Morphology of Structure and Microhardness of Al-(Ni,Cu,Be,Fe,Co) Eutectic Compositions"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 35, No 2, Feb 73, pp 347-354

**Abstract:** This work was devoted to studying the anisotropy of eutectic microhardness and the effect of dispersity of eutectic phases on microhardness and its anisotropy for the following eutectic systems: Al-Al<sub>3</sub>Ni, Al-Al<sub>2</sub>Cu, Al-Be, Al-Al<sub>3</sub>Fe, Al-Al<sub>9</sub>Co<sub>2</sub>. It was found that in the directed crystallization of the above eutectic systems, a sharp anisotropy of microhardness can be observed which is expressed in both a change in the shape of the pyramidal penetrator impressions (type I anisotropy) and in the difference of absolute microhardness values in the longitudinal and transverse (with respect to direction of crystallization) cross sections of the sample (type II anisotropy). The micro hardness of a eutectic composition was found to be inversely proportional to the square root of the distance between the particles of the high-strength dispersed phase, which is explained by the effect of retarding the process of plastic deformation by interphase surfaces, leading to strengthening of the matrix phase. No 1/2

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USSR

KURILO, YU. P., et al., *Fizika Metallov i Metallovedeniye*, Vol 35, No 2,  
Feb 73, pp 347-354

substantial effect of eutectic structure dispersity on microhardness anisotropy  
was detected. 8 figures, 2 tables, 9 bibliographic references.

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H.S.

Selected Transactions  
of Metallurgy JPRS 51611  
Ed. Mat. 73 - Atom. Fizika  
Metall. i Metallovedeniye  
Vol. 34, #6, 1973

THERMAL STABILITY

UDC 539.216.620.181

Yu. P. Kurnila, A. I. Surov<sup>y</sup>, and A. S. Tsvetkov, Physics, Engineering,

Institute of the Ukrainian SSR Academy of Sciences, submitted to press

16 March 1972

The high-temperature stability of the reinforcing phase in the eutectic composition Al-Al<sub>2</sub>Ni, obtained in a wide range of the composition was investigated. The dependence of rates of crystallization upon the temperature and the annealing time of the composition was found. The behavior of the dispersion was studied.

The production of a number of materials having unique electrophysical properties, their stability or applicability, and mechanical properties is

a controlled change of structure and increased compositions [1]. The advance of the crystallization of such eutectic compositions depends upon them [2, 3] we may control the dimensions and the temperature gradient at the volumetric type. Subsequent dispersion, shape, distribution, and even analysis, the properties of dispersivity of the composition in alloys of the indicated. These properties have an extreme relative to the phases and, in the final, indicated.

In directed hardening the growth of the phases on a plane crystallization front in a steady-state regime, occurs, which increases the low-index, and this means low-energy, interface.

In subsequent annealing, the relative density of the material to microstructural discontinuities (interfaces), Al-Al<sub>2</sub>Gu [4] and Al-Al<sub>3</sub>Ni [5], was observed experimentally in systems of

In this work the investigation of the effect of the crystallization conditions on the microstructure of the eutectic Al<sub>3</sub>Ni and its stability at increased temperatures is continued. The kinetics of the crystallization enlargement of the particles is continued.

An alloy of eutectic composition of the eutectic melt were studied from elements of pure 99.9996% Al and 99.97% Ni.

The specimens prepared from the Chokhrai'sky method in a vacuum of ~10<sup>-6</sup> torr. The specimens were 4 millimeters in diameter, and a length of 1,000 millimeters. The specimens were obtained at withdrawal rates of 6, 72, 163, 342, 697 and 1472 millimeters per hour.

The methodology of the treatment of the specimens for metallographic analysis is described in reference [2].

The specimens were annealed in a vacuum resistance furnace at a pressure of ~10<sup>-5</sup> torr and at temperatures of 508, 573 and 608°C [20].

The annealing time varied from 25 to 100 hours. Since the basic effect in the annealing of the fibers of the Al<sub>3</sub>Ni phase, collected was the magnitude of  $\pi/\rho$ , or the measure of the effect of the number of fibers before annealing, the ratio of the number of the effect case or necessarily, it is an accurately measured quantity. This is easiest, and the distance between them.

UDC

UDC 531.38

BELETSKIY, V. V. and TORZHEVSKY, A. P., Institute of Applied Mechanics,  
Academy of Sciences USSR Moscow

"Stability of High Speed Revolutions of an Axisymmetric Satellite in  
Gravitational Field"

Moscow, Doklady Akademii Nauk, SSSR, Vol 203, No 1, Mar-Apr 72, pp 50-53

**Abstract:** The case of the satellite high speed revolutions about the center of mass, when the frequency of revolutions is much higher than the orbital frequency is analyzed, that is when the kinetic energy of revolutions  $T$  highly exceeds the force function  $U$ . The analysis is based on the solution of a system of canonic equations with Hamiltonian function, describing the motion of an axisymmetric solid body about the center of mass on a circular orbit, in the Newtonian gravitational field. The R. B. Barrar theorem in a particular formulation is used to substantiate the stability of the satellite precession, according to its geometrical and velocity characteristics.

1/1

USSR

KAZAKOV, YU. V., Engineer, TOSHCHEV, A. M., Engineer, BELEN'KIJ, A. M.,  
Candidate of Technical Sciences, KRECHETOV, A. D., Engineer, and SAMOKHVALOV,  
O. A., Engineer

UDC 621.791.753.042.93.01.024.21669.245  
"Structure and Properties of Joints Obtained by Pulse Arc Welding of Thin-  
Walled Nickel Alloy Parts"  
Moscow, Svarochnoye Proizvodstvo, No 4, Apr 71, pp 35-36

**Abstract:** Results are presented of comparative studies of the structure  
and properties of welded joints obtained in welding EP199 alloy and Ep222  
steel 1 to 2 mm thick by a continuous and pulsed arc in an argon atmosphere  
with a nonconsumable electrode. It is shown that pulsed arc welding makes  
it possible to improve weld formation and the mechanical properties of  
welded joints of EP199 alloy and EP222 steel.

1/1

USSR

UDC: 621.791.75:669.715

KAZAKOV, Yu. V., KRECHETOV, A. D., Kuybyshev, BELEN'KIY, A. M., and  
TOSHCHEV, A. M., Kazan'  
"Characteristics of Arc Welding Aluminum Alloy Parts Differing in Gage"

Kiev, Avtomaticheskaya Svarka, No 11, Nov 70, pp 51-53

**Abstract:** The conditions for shaping welds of aluminum alloys of difference gages are much more complex than those for steel. The intensive heat transfer to the mass of a heavy aluminum part requires a considerable increase in linear welding energy. The shielding action of the gap markedly weakens the heat transfer from the edge of the thin part. Quality joints of parts of different gages may be produced by either limiting or completely eliminating the direct action of the arc on the thin edge. The simplest joint meeting this condition is an edge joint. A new technology of welding is described using a shielding shoulder to produce a lap joint. It is based on a shoulder made on the heavy-gage part, with the height of the shoulder greater than the length of the arc. The shoulder protects the thin edge from the direct action of the arc. The thin edge is fused by

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USSR

KAZAKOV, Yu. V., et al, Avtomaticheskaya Svarka, Noll, Nov 70, pp 51-53

the heat given off by the molten metal of the shoulder. Various types of shielding shoulders are described.

2/2

USSR

TOSHICH R. S.

UDC [537.226+537.311.33].01

"Effect of Kinematic and Dynamic Interactions on Exciton Spectrum of Zeroth-  
Approximation"

(Soobshch. Ob"yedin. in-ta yadern. issled. Labor. teor. fiz., R4-5885)  
(Communications of Joint Nuclear Research Institute, Theoretical Physics  
Laboratory, R4-5885), Dubna, 1971, 17 pp, ill., rotaprint (from RZin-Fizika,  
No 1, Jan 72, Abstract No 1YE1041)

Translation: An exciton spectrum of the zeroth-approximation is obtained,  
taking into consideration the effects of kinematic and dynamic interactions for  
Frenkel excitons.

1/1

"APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002203320011-7

UNCLASSIFIED  
SUMMARY OF THE RESULTS OF SURGICAL TREATMENT OF THE CARDIAC AND  
MAJOR VESSELS IN THE CAUCASUS MINERAL WATERS -U-  
PROCESSING DATE--02OCT70  
AUTHOR-(05)-TOSHINSKIY, I.I., BOGOYEV, D.N., KURTSEV, KH.N., FISHOVAY,  
R.Z., ABANICHEV, N.T.  
COUNTRY OF INFO--USSR

SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 3, PP  
25-32  
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SURGERY, CIRCULATORY SYSTEM, HEART, BLOOD VESSEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/0851

CIRC ACCESSION NO--APO102812

STEP NO--UR/0589/70/104/003/0025/0032

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002203320011-7"

2/2 019

CIRC ACCESSION NO--AP0102812

UNCLASSIFIED

PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS PRESENT THE ANALYSIS OF THEIR EXPERIENCE WITH 984 OPERATIVE PROCEDURES PERFORMED ON THE HEART AND LARGE VESSELS IN THE HOSPITAL OF THE PYATOGORK CITY.

UNCLASSIFIED

89

1/2 015 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--RETENTION TIME OF PENICILLIN IN INTESTINE OF GUINEA PIGS -U-  
AUTHOR--(03)-TUSHKOV, A., ABRASHEV, I., GEORGIEV, D.

COUNTRY OF INFO--USSR

SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 5, PP 422-426

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PENICILLIN, GUINEA PIG, GASTROINTESTINAL SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0143

STEP NO--UR/0297/70/015/005/0422/0426

CIRC ACCESSION NO--AP0114539

UNCLASSIFIED

2/2 015

CIRC ACCESSION NO--AP0114539

UNCLASSIFIED

PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. IT WAS FOUND THAT IN GUINEA PIGS TREATED WITH PENICILLIN, THE LATTER WAS ACCUMULATED AND RETAINED IN THE INTESTINE TISSUES. DEPENDING ON THE DOSE, THE ANTIBIOTIC WAS RETAINED IN THE TISSUES OF THE INTESTINE FOR 2 TO 4 DAYS OR EVEN MORE IN SOME CASES. PENICILLIN RETAINED IN THE INTESTINE TISSUES INHIBITED THE GRAMNEGATIVE MICROFLORA FOR PROLONG PERIODS OF TIME AND PROVIDED CONDITIONS FOR MULTIPLICATION OF E. COLI WHICH CAUSED HEMORRHAGIC ENTEROCOLITIS. NO SUCH DISTRIBUTION OF PENICILLIN WAS OBSERVED IN ALBINO MICE, RATS AND RABBITS. FACILITY: INSTITUTE FOR MICROBIOLOGY OF BULGARIAN ACADEMY OF SCIENCES, SOFIA.

UNCLASSIFIED

1/2 036 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--NOMOGRAPH FOR DETERMINING A HEAT TRANSFER COEFFICIENT BETWEEN THE  
SURFACE AND THE FLUIDIZED BED -U-  
AUTHOR-(03)-GELPERIN, N.I., AYNSHTEYN, V.G., TOSKUBAYEV, I.N.  
COUNTRY OF INFO--USSR  
SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(3), 225-6  
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--HEAT TRANSFER COEFFICIENT, NOMOGRAPH, FLUIDIZED BED, GAS FLOW,  
QUARTZ

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1494

STEP NO--UR/0064/70/046/003/0225/0226

CIRC ACCESSION NO--AP0118481

UNCLASSIFIED

2/2 036 UNCLASSIFIED PROCESSING DATE--13NOV70  
CIRC ACCESSION NO--AP0118481  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A NOMOGRAPH FOR THE DETN. OF THE  
HEAT TRANSFER CUEFF. ALPHA BETWEEN THE SURFACE AND A FLUIDIZED BED, AS A  
FUNCTION OF THE GAS VELOCITY W WAS PLOTTED BASED ON THE EQUATION OF  
GEL'PERIN, ET AL. (1966); IN THE CASE OF A BED OF QUARTZ PARTICLES 0.35  
MM IN DIAM., THE MAX. ALPHA 267 CKAL-M<sup>2</sup>PRIME2 HR DEGREE WAS OBTAINED AT  
W EQUALS 0.455 M-SEC.

UNCLASSIFIED

USSR

UDC 548.537.22

ROZHANSKIY, V. N., TOT, A., and LE KUANG, Institute of Crystallography,  
Academy of Sciences USSR

"Electrorelaxation 'Effect' in Alkali Halide Whiskers Grown From Aqueous Solution With Addition of Polyvinyl Alcohol"

Moscow, Kristallografiya, Vol 16, No 5, Sep-Oct 71, pp 986-988

**Abstract:** The article describes results of a study of electrorelaxation phenomena in alkali halide whiskers by the bending vibration method. NaCl and KBr whiskers grown from aqueous solution with the addition of polyvinyl alcohol, as well as on cellophane and silica gel, were used for the measurements. It was found that the electric field parallel to the crystal vibration plane causes a significant increase in the internal friction of NaCl and KBr whiskers grown from solution with the addition of polyvinyl alcohol. The field component perpendicular to the vibration plane has no effect on internal friction. The influence of the electric field on internal friction -- the electrorelaxation effect -- rises with a decrease in the vibration frequency.

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USSR

ROZHANSKIY, V. N., et al., Kristallografiya, Vol 16, No 5, Sep-Oct 71, pp  
986-988

NaCl and KBr whiskers grown on cellophane and silica gel show no electrorelaxation effect in fields with a strength of 0-600 v.cm<sup>-1</sup>. The effect is the result of polyvinyl alcohol trapped by whiskers during their growth. Polyvinyl alcohol can be eliminated by vacuum heating of the crystals, which leads to a decrease or the complete disappearance of the electrorelaxation effect. Observation of the electrorelaxation effect can be a convenient technique for detecting the trapping of some organic impurities in whisker growth.

The authors thank G. V. BEREZHKOVA, I. N. TSVETKOV, and other coworkers who helped stage the experiments.

2/2

- 95 -

Automatic Control Systems

USSR

UDC: 681.3:519.2

MALYSHEV, N. G., GORODETSKIY, B. V., TOTAYEV, L. T., Taganrog Radio Engineering Institute

"An Automatic Monitoring System"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 8, Mar 73, Author's Certificate No 367474, Division G, filed 4 May 70, published 23 Jan 73, p 128

Translation: This Author's Certificate introduces an automatic monitoring system containing a statistical analyzer, an associative memory, a controllable generator of random functions with arbitrary distribution law, a unit for storage of settings, a comparison unit, a control unit, a unit for storage of coefficients, a normal random number generator, a computer unit, and a display unit. As a distinguishing feature of the patent, the accuracy and reliability of the system are improved by connecting the output of the statistical analyzer to the first input of the associative memory, while the output of the controllable generator of random functions with arbitrary distribution law is connected to the second input of the associative memory. The input of this random function generator is con-

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USSR

MALYSHEV, N. G. et al., USSR Author's Certificate No 367474

nected to the first output of the control unit, and the second output of the control unit is connected to the first input of the unit for storage of coefficients. The fourth output of the control unit is connected to the input of the normal random number generator, and the control unit input is connected to the output of the associative memory. The output of the associative memory is connected to the second input of the unit for storage of settings, and the output of this unit is connected to the first input of the comparison unit. The second input of the comparison unit is connected to the output of the computer unit. Connected to the first input of the computer unit is the output of the normal random number generator, while the output of the unit for storage of coefficients is connected to the second input of the computer unit. The output of the comparison unit is connected to the input of the display unit.

2/2

- 10 -

USSR

UDC: 621.396.6.022(088.8)

KOKHANOV, B. T., GORODETSKIY, B. V., SHIBANOV, G. P., TOTAYEV, L. T.,  
Taganrog Radio Engineering Institute

"A Device for Automatically Checking Electronic Radio Equipment"

USSR Author's Certificate No 264793, filed 15 Sep 68, published 29 Jun 70  
(from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V462 P).

Translation: This Author's Certificate introduces a device for automatically checking electronic radio equipment. The unit contains a normalizing commutator, measurement device, analyzer, signal converters, time-setting units with time selectors, and modules for automatic monitoring and display. To improve efficiency in checking, the device also contains a prognosis module whose inputs are connected through the signal converters and time selectors to the prognosis outputs of the normalizing commutator, measurement device and analyzer, while the output of the prognosis module is connected to the display module through an OR circuit. The other input of the OR circuit is connected to the output of the automatic monitoring module.

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USSR

UDC 681.332.65

BOYCHENKO, V. M., LEUSENKO, A. Ye., and TOTAYEV, L. T.

"A Random Number Generator With Arbitrary Distribution"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,  
No 22, Aug 71, Author's Certificate No 309356, Division G, filed 24 Sep 68,  
published 9 Jul 71, p 187

Translation: This Author's Certificate introduces a random number generator with arbitrary distribution containing a generator of uniformly distributed random numbers, a master clock, a digital comparison circuit, and a device for storage of distributions. The output of the generator of uniformly distributed random numbers is connected to one input of the digital comparison circuit, the output of the distribution storage device is connected to the other input of the comparison circuit, and the master clock is connected to the input of the generator of uniformly distributed random numbers. As a distinguishing feature of the patent, speed is increased by installing a logarithmic sorting device between the output of the comparison circuit and the input of the storage device. The second input of the sorting device is connected to the output of the master clock.

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- 170 -

USSR

UDC 681.333:519.2

BOYCHENKO, V. M., LEUSENKO, A. YE., TOTAYEV, I. T., Taganrog Radio-  
technical Institute

"A Random Number Generator"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye  
Znaki, No 4, 1970, p 99, patent No 260969, filed 24 Jun 68

Abstract: This author's Certificate introduces a random number generator with an arbitrary distribution law. The device contains generators of uniformly distributed random numbers, a cycle generator, a digital comparison circuit, a memory device, rectifiers, delay lines, a binary counter, and a decoder. As a distinguishing feature of the patent, the device is simplified by connecting the output of the digital comparison circuit to its input through the delay lines, the binary counter, the decoder, and the memory device.

1/1

Acc. Nr:

AP0037224

Ref. Code: UR 0239

PRIMARY SOURCE: Fiziologicheskiy Zhurnal SSSR, 1970, Vol 56,  
Nr 2, pp 292 - 293

MODIFICATION OF THE METHOD FOR THE RENAL ARTERY  
CATHETERIZATION.

Datirovskiy, E. A.; Yezhov, V. F.; Tidzhiev, V.

Dept. of Normal Physiology, North-Osetia Medical Institute, Ordzhonikidze

Experiments on the 60 female dogs showed a possibility of introduction of a catheter into the renal artery through the left upper lumbar artery. This method proved to be more advantageous as compared with those used at present, as it provided a possibility to influence the renal function by various drugs administered right into the renal arterial blood flow.

D. 21.

REEL/FRAME  
**19730148**

2

1/2 026

UNCLASSIFIED

PROCESSING DATE--09OCT70

TITLE—ANTIDIURETIC ACTIVITY OF THE BLOOD DURING EXPERIMENTAL  
HYPERTHYROIDISM -U-

AUTHOR—TOTROVA, E.A.

COUNTRY OF INFO--USSR

SOURCE--PROBL. ENDOKRINOL. 1970, 16(1), 74-4

DATE PUBLISHED—70

SUBJECT AREAS—BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DIURESIS, BLOOD CHEMISTRY, DOG, HORMONE, THYROID GLAND,  
ENDOCRINE SYSTEM DISEASE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/1913

STEP NO--UR/0502/70/016/001/0071/0074

CIRC ACCESSION NO--A0103642

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0103642 .  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE BLOOD LEVELS OF ANTIIDIURETIC HORMONE DURING THYROTOXICOSIS WERE DETERMINED IN DOGS WITH GASTRIC AND URINE BLADDER FISTULAS. THE ANTIIDIURETIC ACTIVITY OF BLOOD PLASMA WAS DETERMINED BEFORE AND AFTER WATER LOADING (3 PERCENT OF THE BODY WT.). ANTIIDIURETIC ACTIVITY (ADA) WAS GIVEN IN MICROUNITS OF PITUITRIN-ML OF BLOOD PLASMA. IN CONTROL ANIMALS THE ADA WAS 1.83-5.89 BEFORE THE WATER LOADING. WITHIN 1 HR AFTER WATER LOADING IT DECREASED BELOW THE LOWER RANGE OF SENSITIVITY. IN THE FIRST GROUP OF DOGS (GIVEN 1.0-2.5 G OF THYROIDIN SPONTANEOUS WATER DIURESIS. AFTER WATER LOADING ADA DECREASED STRONGLY. IN ANOTHER GROUP OF ANIMALS (GIVEN 1 G THYROIDIN PER KG AND 1 MG THYROXINE PER KG FOR 6 DAYS) THE ADA IN BLOOD SERUM WAS VERY HIGH AND DID NOT CHANGE AFTER WATER LOADING. IN ANOTHER SERIES OF EXPTS. ASCORBIC ACID WAS ADMINISTERED TO THYROTOXIC ANIMALS. ITS ADMINISTRATION RESULTED IN A NORMALIZED DIURESIS CAUSED BY A REDUCED TUBULAR WATER RESORPTION. IN A FURTHER SERIES OF EXPTS. WITH ARTIFICIALLY PRODUCED THYROTOXICOSIS AND WATER LOADING THE OSMOTIC PRESSURE OF BLOOD, BLOOD PLASMA, AND URINE WERE DETERMINED. FROM THESE VALUES THE TRANSPORT OF OSMOTICALLY FREE WATER (TCH SUB2 D) WERE COMPUTED. DURING THE PERIOD OF HIGHLY INCREASED BLOOD ADA, WITH DIURESIS INHIBITION, THE TCH SUB2 D VALUES WERE HIGHER THAN IN THE CONTROL PERIOD (E.G. WITHIN 1 HR AFTER WATER LOADING). IT WAS CONCLUDED THAT DURING THE EXPTL. THYROTOXICOSIS INCREASED AMTS. OF ANTIIDIURETIC HORMONE ARE PRESENT IN BLOOD ENTERING THE RENAL TUBULI.

FACILITY: SEV.

UNCLASSIFIED

USSR

UDC:681.325.65:512.952

VAVILOV, Ye. N., YEGOROV, B. M., LANTSEV, V. S., TOTSENKO, V. G.

"Synthesis of Systems Using Threshold Elements"

Sintez Skhem na Porogovykh Elementakh [English version above], Moscow, Sovetskoye Radio Press, 1970, 368 pp

Annotation: Conditions are analyzed under which a switching function can be realized by one threshold element. Methods are presented for synthesis of logic circuits and automata based on threshold elements. Varieties of threshold elements are described. A number of standard units and discrete circuits based on threshold elements are analyzed. Methods are presented for synthesis of circuits based on threshold elements. Methods are presented for synthesis of circuits based on threshold elements considering the requirements of reliability. A table of threshold functions of six variables is presented. The methods of synthesis are reduced to algorithms convenient for use in engineering practice and are illustrated with examples. 116 tables; 92 figures; 29 bibli. refs.

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USSR

VAVILOV, Ye. N. et al., Sintez Skhem na Forogovykh Elementakh, Moscow,  
Sovetskoye Radio Press, 1970, 368 pp

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VAVILOV, Ye. N. et al., Sintez Skhem na Porogovykh Elementakh, Moscow,  
Sovetskoye Radio Press, 1970, 368 pp

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VAVILOV, Ye. N. et al., Sintez Skhem na Porogovykh Elementakh, Moscow,  
Sovetskoye Radio Press, 1970, 368 pp

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VAVILOV, Ye. N. et al., Sintez Skhem na Porogovykh Elementakh, Moscow,  
Sovetskoye Radio Press, 1970, 368 pp

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Synthesis of Discrete Circuits Using Threshold Elements

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Sovetskoye Radio Press, 1970, 368 pp

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VAVILOV, Ye. N. et al., Sintez Skhem na Porogovykh Elementakh, Moscow,  
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USSR

VAVILOV, Ye. N. et al., Sintez Skhem na Porogovykh Elementakh, Moscow,  
Sovetskoye Radio Press, 1970, 368 pp

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USSR

VAVILOV, Ye. N. et al., Sintez Skhem na Porogovykh Elementakh, Moscow,  
Sovetskoye Radio Press, 1970, 368 pp

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9/9

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USSR

UDC: 518.9

TOTSENKO, V. G.

"On Controlling Systems in Conflicting Situations"

V sb. Sistemotekhnika. Vyp. 4 (Systems Analysis--collection of works, No 4), Kiev, 1970, pp 18-28 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V594)

Translation: Games of the survival game type are considered: games of accumulation and games with losses. Such games may be described by a graph with a finite number of states when the initial resources of the players are limited. It is shown that if the players attempt to minimize the probability of their own ruin, then the game becomes nonantagonistic. Ye. Yanovskaya.

1/1

- 30 -

USSR

UDC: 621.374.335

VAVILOV, Ye. N., YEGOROV, B. M., LANTSEV, V. S., TOTSENKO, V. G.

"Synthesis of Circuits Based on Threshold Elements"

Sintez skhem na porogovykh elementakh (cf English above), Moscow, "Sov. radio", 1970, 368 pp, ill. 1 r. 30 k. (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1G203 K)

Translation: The authors consider conditions for realizability of a switching function by one threshold element. Methods are outlined for synthesizing logic circuits and automata based on threshold elements. The different kinds of threshold elements are described. A number of standard discrete-action units and circuits based on threshold elements are considered. Methods are given for synthesizing circuits based on threshold elements with regard to reliability requirements. A table of threshold functions of six variables is presented. Methods of synthesis are reduced to algorithms which are convenient for use in engineering practice, and illustrative examples are given. Bibliography of 29 titles. Annotation.

1/1

- 14 -

USSR

UDC 666.764.36

KARPINOS, D. M., GROSHEVA, V. M., MIKHASHCHUK, YE. P., and TOTSKAYA, G. A.,  
Institute of Problems of Material Science, Academy of Sciences UkrSSR

"A Refractory Based on Chromium Oxide"

Moscow, Ogneupory, No 1, 1974, pp 55-56

Abstract: Studies are performed on the production of refractory materials from chromium oxide, reinforced with mullite single crystal fibers. The promise of the use of mullite fiber as a reinforcing component to increase the thermal and impact strength of products of chromium oxide is demonstrated.

1/1

USSR

UDC 624.071.3

TOTSKIY, O. N.

"Artificial Control of Forces in Systems Containing Square Metallic Membranes"

V sb. III Mezhdunar. konf. po predvaritel'no napryazh. met. konstruktsiyam. T. 1  
III International Conference on Prestressed Metal Structures. Vol. 1 -- Collection  
of Works), no place or year of publication, pp 433-440 (from RZh-Mekhanika,  
No 12, Dec 71; Abstract No 12V922)

Translation: The results of theoretical and experimental studies conducted at design and planning and scientific research institutes for civil aviation concerning the optimization of sheet metal structures in the form of a membrane in a square framework are presented. The Ritz method is used for theoretical studies of the interaction of the membrane in the framework and experiments were conducted on metal models. Optimization was achieved by artificial recording of forces and displacements in the membrane and the shaped framework depending on the purposes presented: by changing the relationships of the rigidities of the membrane and contour ribs for a change in the magnitude and character of the forces transmitted to the contour frame; by prestressing the membrane to reduce the deformation of the system and by assigning an initial bending of the

1/2

TOTSKIY, O. N., III Mezhunar. kcaf. po predvaritel'no napryazh. met. konstruktsiyam. T. 1, no place or year of publication, pp 443-440

membrane to reduce forces in the system. A comparative analysis was conducted of the results of the theoretical and experimental studies in these cases of artificial control. The possibility of a fairly wide range in the control of forces and displacements is noted to ensure a favorable combination of bearing and safety functions in the structures discussed. It is stated that two hangars with roof coverings of the membrane type in which the contour frames operate as unbending frames were designed and constructed on the basis of studies conducted in the USSR. A. F. Anishchenko.

2/2

- 17 -

I/2

022

UNCLASSIFIED

PROCESSING DATE--23 OCT 70

TITLE--A STUDY OF THE DESTRUCTION OF SUPERCONDUCTIVITY IN WIRES BY  
ALTERNATING CURRENT -U-

AUTHOR--TOTUBALIN, V.N.

COUNTRY OF INFO--USSR

SOURCE--CRYOGENICS; 10: 165-6, APR 1970

DATE PUBLISHED----APR 70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., PHYSICS

TOPIC TAGS--ELECTROMOTIVE FORCE, SUPERCONDUCTIVITY, OSCILLOSCOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1179

STEP NO--UK/0000/70/010/000/0165/0166

CIRC ACCESSION NO--AP0120026

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC-ACCESSION NO--AP0120026  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN OSCILLOSCOPE ARRANGEMENT, WHICH SIMULTANEOUSLY SHOWS THE CURRENT THROUGH A SPECIMEN AND THE VOLTAGE ON IT, IS OFTEN USED TO STUDY THE PROCESS OF DESTRUCTION OF SUPERCONDUCTIVITY BY A CURRENT. THIS VOLTAGE IS COMPOSED OF THE EMF FROM THE SELF INDUCTANCE OF THE SPECIMEN AND THE POTENTIAL DROP ALONG ITS OHMIC RESISTANCE. THE INDUCED EMF FROM THE SPECIMEN CAN BE BALANCED IF THE MEASURING AND CURRENT CIRCUITS ARE CONNECTED INDUCTIVELY. A BRIDGE CIRCUIT FOR BALANCING THE SPECIMEN SELF INDUCTION EMF IS DESCRIBED, IN WHICH THE MAGNITUDE OF THE COMPENSATING EMF CAN BE CONTROLLED. COMPENSATION OF THE SELF INDUCED EMF OF THE SPECIMEN MAKES IT POSSIBLE TO OBSERVE THE TRANSITION PROCESS FROM THE SUPERCONDUCTING TO THE NORMAL STATE UNDER THE ACTION OF A CURRENT PULSE IN CONDITIONS WHEN THE INDUCED EMF IS GREATER THAN THE VOLTAGE DROP ALONG THE OHMIC RESISTANCE.

FACILITY: PHYSICAL TECHNICAL INST., LENINGRAD.

UNCLASSIFIED

1/2 031 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--EFFECT OF ALCOHOLIC INTOXICATION ON THE SUGAR LEVEL IN CADAVER  
BLOOD. PRELIMINARY COMMUNICATION -U-  
AUTHOR-(02)-TOV, L.M., KISHINEVSKIY, A.N.

RECORDED

COUNTRY OF INFO--USSR

SOURCE--STUD. MED. EKSPERTIZA 1970, 13(1), 21-2

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ALCOHOL, TOXICITY, CADAVER BLOOD, BLOOD CHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0532

STEP NO--UR/0525/70/013/001/0021/0022

CIRC ACCESSION NO--AP0137621

UNCLASSIFIED

2/2 031 UNCLASSIFIED PROCESSING DATE--27NOV70  
CIRC ACCESSION NO--AP0137621  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. VENOUS BLOOD SUGAR AND ETOH WERE STUDIED IN CADAVERS. MOST OF THEM HAD BEEN INTOXICATED WITH ETOH. IT WAS FOUND THAT DEATH CAUSED BY ACUTE CIRCULATORY COLLAPSE AND STRANGULATION PRODUCED AN INCREASE IN BLOOD SUGAR LEVEL TO ABOVE 200 MG PERCENT. IF INTOXICATION WITH ETOH WAS PRESENT, THIS INCREASED LEVEL WAS ABOLISHED. IT WAS CONCLUDED THAT THE DETN. OF BLOOD SUGAR MAY HELP IN EVALUATING THE CAUSE OF DEATH. FACILITY: KEMEROV. GDS. MED. INST., KEMEROVO, USSR.

UNCLASSIFIED

1/2 019

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--ON THE ROLE OF THE A-FACTOR IN THE STREPTOMYCINE BIOSYNTHESIS -U-

AUTHOR--(05)-TOVAROVA, L.I., KORNITSKAYA, YE.YA., PLINER, S.A., SHEVCHENKO,  
L.A., ANISOVA, L.N.

COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA AKADEMII NAUK SSSR, SERIYA BIOLOGICHESKAYA, 1970, NR 3,  
PP 427-434

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--STREPTOMYCIN, BIOSYNTHESIS, ACTINOMYCETES, BACTERIA MUTATION,  
TRANSAMINASE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0495

STEP NO--UR/0216/70/000/003/0427/0434

CIRC ACCESSION NO--AP0126244

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0126244

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DATA ARE DISCUSSED CONCERNING THE A-FACTOR CONTENTS IN VARIOUS ACTINOMYCES STREPTOMYCINI STRAINS. THE PRESENCE OF THE A-FACTOR IN ACTIVE STREPTOMYCINE PRODUCERS (STRAINS 3213 AND G-5) WAS SHOWN AS WELL AS IN SOME MUTANT STRAINS WITH DISTURBED BIOSYNTHESIS. ALL THE MUTANTS WHICH HAVE FAILED TO SYNTHESIZE THE A-FACTOR DO NOT PRODUCE ANY STREPTOMYCINE, WHILE ADDITION OF THE A-FACTOR RESTITUTES THEIR ABILITY TO PRODUCE THE ANTIBIOTIC. NEOMYCINE AND CANAMYCINE PRODUCENTS DO NOT FORM ANY A-FACTOR IN THE COURSE OF FERMENTATION AND CONSEQUENTLY THIS SUBSTANCE DOES NOT PARTICIPATE IN THE BIOSYNTHESIS OF THE SAID ANTIBIOTICS. IN THE ABSENCE OF THE A-FACTOR THE INACTIVE MUTANT 1439 DOES NOT PRODUCE ANY STREPTIDIENE AND DISPLAYS A LOW TRANSAMIDINASE ACTIVITY. WHEN GROWN IN THE PRESENCE OF THE A-FACTOR THIS STRAIN HAS A HIGH TRANSAMIDINASE ACTIVITY AND SYNTHESIZES CONSIDERABLE AMOUNTS OF STREPTIDIENE AND STREPTOMYCINE. THESE OBSERVATIONS SUGGEST THAT THE A-FACTOR PARTICIPATES IN THE FORMATION OF THE STREPTIDIENE PART OF THE STREPTOMYCINE MOLECULE. FACILITY: INSTITUTE OF CHEMISTRY OF NATURAL PRODUCTS, ACADEMY OF SCIENCES, USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--FORMATION OF BETA LYSINE IN THE COURSE OF BIOSYNTHESIS OF  
STREPTOTHRICINE ANTIBIOTICS -U-  
AUTHOR--(03)--VORONINA, O.I., TOVAROVA, I.I., KHOKHLOV, A.S.

COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA AKADEMII NAUK SSSR, SERIYA BILOGICHESKAYA, 1970, NR 3,  
PP 435-440  
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANTIBIOTIC, BIOSYNTHESIS, LYCINE,  
FERMENTATION/(U)STREPTOTHRICINE ANTIBIOTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0498

STEP NU--UR/0216/70/000/003/0435/0440

CIRC ACCESSION NO--AP0126246

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NU--AP0126246  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PRESENT PAPER DEALS WITH THE QUESTION OF FORMATION OF BETA-LYSINE IN THE COURSE OF BIOSYNTHESIS OF STREPTOTHRICIN ANTIBIOTICS. UTILIZATION OF C-PRIME14-LABELLED AMINOACIDS HAS SHOWN THAT BETA-LYSINE CARBON IN CONTRAST TO OTHER F TYPES OF STREPTOTHRICINS) AND STREPTOTHRICINE F. DETERMINATION OF C-PRIME14 IN DIFFERENT PARTS OF THE STREPTOTRICINE F MOLECULE WHICH IS FORMED IN THE PRESENCE OF L,C-PRIME14-DL,ALPHA,LYSINE HAS SHOWN THAT THE INCORPORATED CARBON OF L,C-PRIME14-DL,ALPHA,LYSINE IS COMPLETELY DETECTED IN BETA-LYSINE, WHEREAS NO LABEL IS FOUND BOTH STREPTOLIDINE AND GULOSAMINE, THIS SHOWING THE SPECIFICITY OF INCORPORATION. THUS IT WAS CONCLUDED THAT ALPHA-LYSINE LIES VERY CLOSE TO THE PATH OF BETA-LYSINE FERMENTATION IN THE COURSE OF STREPTOTHRICIN BIOSYNTHESIS.  
FACILITY: INSTITUTE OF CHEMISTRY OF NATURAL PRODUCTS, ACADEMY OF SCIENCES, USSR.

UNCLASSIFIED

APU40918

Ref. Code: UR 0422

PRIMARY SOURCE: Standarty i Kachestvo, 1970, Nr 1, pp 29-30

/ Development of Method, Instrumentation and Norms  
for Determination of Impact Strength of Crushing  
Elements Tovarov, V. V.; Oskalenko, G. N.;

Pisarenko, I. S.

The currently valid GOST 7522-64 specifying cast-  
iron crushing cylinders and ellipsoids fails to provide a  
most important operational property, the impact strength.  
This property can be checked by means of a newly de-  
veloped and manufactured set-up which requires 20 to  
25 minutes to determine the relative impact strength of  
a representative sample of the crushing elements (25 spec-  
imens). The tests resulted in the selection of a method  
for the determination of impact strength and in recom-  
mendations concerning its nominal values for introduc-  
tion into GOST 7522-64. )

MT

REEL/FRAME  
13750657

USSR

Television

UDO 621.397.617

TOVBIN, M.N.

"A New Telecineprojection Method"

Tekhnika kino i televideniya (Motion Picture And Television Technology), No. 9,  
Sept 1972, pp 3-5

**Abstract:** The possibility of constructing a simplifier telecineprojector for color films is considered. It is claimed that in this version of a traveling-beam telecineprojector, where scanning of an image is performed with stationary motion-picture film, it is possible to obtain a considerable gain with respect to simplicity of servicing and stability. Also the necessity is eliminated for special devices which are used for compensation of continuous movement of motion-picture film, and the necessity for including in itself critical and cumbersome optical units and mechanical elements. Block diagrams are shown of telecineprojectors for black-and-white motion-picture film and for color film, and simplified block diagrams are presented of a device for forming the output signals  $Y'$ ,  $D'_R/D'_B$ , and a device forming coded signals at the output of the telecineprojector. 6 ref. 5 fig.

1/1

Television

USSR

UDC: 621.397.331.24

TOVBIN, M. N.

"A Method of Reproducing Television Line Images on the Screen of a Cathode Ray Tube"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 32, Nov 71, Author's Certificate No 319107, Division H, filed 2 Oct 68, published 28 Oct 71, p 184

Translation: This Author's Certificate introduces a method of reproducing television line images on the screen of a cathode ray tube in which brightness gradations of individual image elements which differ from the very brightest and the very darkest are reproduced by changing the dimensions of the bright lines traced by the electron beam on the CRT screen. As a distinguishing feature of the patent, the contrast of the reproduced image is increased by additional deflection of the electron beam by high-frequency sinusoidal voltage amplitude-modulated by the video signal in the direction perpendicular to line scanning.

1/1

USSR

UDC 621.371.552

TOVBINA, A. I., SHANTAR', A. K.

"Results of Determination of the Time of Propagation of Precision Time Short-Wave Radio Signals on the Moscow-Novosibirsk Route (1965-1966)"

Tr. Metrol. in-tov SSSR (Works of Metrological Institutes of the USSR), 1970, vyp. 103 (163), pp 12-15 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 16A164)

Translation: Seasonal and diurnal variations are given for the time of propagation of short-wave radio time signals on the Moscow-Novosibirsk route. Daily measurements were made of the time of propagation of radio time signals transmitted on frequencies of 10 and 15 MHz. The regularities found in the seasonal and diurnal changes in time of propagation can be used to predict this quantity. Six illustrations. Resumé.

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Acc. Nr.

AT0050275

Abstracting Service:  
CHEMICAL ABST. 5/70

Ref. Code

4B0020

104916f Structure of the complex anion  $[\text{Co}(\text{SO}_4)_2(\text{NH}_3)_4]^-$ .  
Ablov, A. V.; Landa, I. I.; Simonov, Yu. A.; Malinovskii,  
Tovbis, A. B. (Inst. Khim. Kishinev, USSR). Dokl.  
Akad. Nauk SSSR 1970, 190(3), 570-81 (Chem. (Russ.)). X-ray  
anal. of the dark-brown form of  $\text{NH}_3[\text{Co}(\text{SO}_4)_2(\text{NH}_3)] \cdot \text{H}_2\text{O}$  indi-  
cates that the  $\text{SO}_4$  groups are in the cis-position and are bonded  
to the Co atom through S. The interatomic distances and valence  
angles are tabulated.  
C. J. Steinberg

REEL/FRAME  
13810205

USSR

TOVBIS, S. N., SHESTAKOV, Yu. G.

"Processing of Data by Statistical Methods"

Materialy po geol. i polezn. iskopayemym Krasnoyarsk. kraya [Materials on Geology and Useful Minerals of Krasnoyarsk Kray], No 9 Krasnoyarsk, 1973, pp 7-120 (Translated from Referativnyy Zhurnal - Kibernetika, No 8, 1973, Abstract No 8 V227 by the authors)

Translation: Using the processing of geological materials as an example, methods are described for estimation of statistical parameters, composition of sampling data, establishment of the closeness of the connection between characteristics studied and the determination of the influence of various factors on changes in quantities studied. Basic statements from the theory of pattern recognition and problems of preparation of data for computers when recognition programs are used are discussed.

1/1

USSR

UDC: 621.43.001.3

ANTONOV, O. G., DOLINSKIY, D. V., MARCHEVSKIY, V. P., MEL'NICHENKO, R. M.,  
OTSECHKIN, Yu. G., PAVLENKO, G. V., ~~TOUKALETS, V. Ye.~~, SARANTEEV, K. B.,  
Institute of Automation, Khar'kov Polytechnical Institute

"An Antistall Device"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,  
No 13, May 72, Author's Certificate No 335444, Division F, filed 21 Sep 70,  
published 11 Apr 72, p 140

Translation: This Author's Certificate introduces an antistall device which may be used for controlling centrifugal compressors. The device contains pickups for the rate of flow and pressure drop across the compressor, an amplifying adder and a regulating valve installed on a bypass line between the pressure and suction channels. As a distinguishing feature of the patent, in order to improve the reliability and accuracy of maintaining the limiting flow rate, a pickup is connected to the amplifying adder which measures the difference in pressures between the wake and kernel of the flow behind the vanes of the exit guide cone to correct control in accordance with variation of the static characteristic of the compressor.

1/1

USSR

BEKULOV, M. T., TOVKUYEV, M. A.

"Flow Around a Permeable Plate with Stream Separation in the Presence of a Wall"

Uch. Zap. Kabardino-Balkar. Unit [Scientific Writings of Kabardino-Balkarian University], 1972, No 39, pp 166-167 (Translated from Referativnyy Zhurnal Mekhanika, No 5, 1973, Abstract No 5B430, by M. I. Gurevich).

Translation: A stream of an ideal, weightless, incompressible fluid flows around a flat plate located perpendicularly to an infinite wall, with stream separation. The two-dimensional problem is studied. The normal velocity at the plate is proportional to the pressure difference before and behind the plate. The proportionality factor is low, i.e., the plate is slightly permeable. A conformal mapping on the upper half plane is used to produce a general solution to the problem and the drag factor of the plate, ignoring terms containing  $k^n$ , where  $n \geq 2$ . In contrast to the case of an impermeable plate, the drag factor of the plate depends on the distance between the plate and the wall.

1/1

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*TOVMA) V. A.*

DISCHARGE

OF A SUPERCONDUCTING STORAGE DEVICE THROUGH AN INVERTER

Article by V. I. Andrianov, V. R. Zaslavskii, O. V. Pirogov, B. N. Sizov  
 by A. G. Suborov, K. V. Sazonov, A. Tsvetkov and R. B. Shirokova,  
Malevich Institute of Electrification and Power Systems, Moscow, USSR  
 pp. 310-323, Izobran. No 196, No 2, 1971, submitted 9 June 1970,

UDC 537.98+512.312.62

JPRS 60590

20 November 1973  
*(S)*

CAROL

Δ- Superconducting

Superconductive inductive power storage devices are promising for use in a number of scientific and engineering fields as emergency sources and as high power electric power sources for covering peak loads in power systems.

The amount of energy stored in this type of a device can be quite large. In particular, a storage device for covering peak loads of 1000 Mw during short time intervals have a number of technically and economic advantages over the conventional high frequency superconductor inverter for transferring the energy stored in the storage device to the AC system. There is no information at present on any attempts to practical realization of a process for transferring the energy from a superconducting storage device to an electric power system.

The inversion of energy stored in a superconducting magnetic field is accomplished at a constant average value of the voltage applied to the superconducting solenoid coil be equal to the average value of the voltage applied to the inverter terminals.

In the latter case, the voltage of energy transfer to the load must be equal to the value of the voltage. It should be noted in this connection that it is possible to use the inverter as an external load when transferring the energy from the superconducting magnetic system for various purposes (power hydroelectromagnetic generators, electric motors, bubble chambers, etc.) in emergency situations (for example, when the normal phase appears in the wind-duct inverter or incomparably more compact, do not require high power cooling systems, etc.).

- 1 -

[I - USSR - F]

TITLE--LOW FREQUENCY INSTABILITY OF AN INHOMOGENEUS PLASMA FORMED BY A  
TUBULAR ION BEAM -U- UNCLASSIFIED PROCESSING DATE--04DEC70

AUTHOR--(04)-GABOVICH, M.D., PROTSENKO, I.M., FOVMACHENKO, V.M., KOLOCHKO,  
V.M.

COUNTRY OF INFO--USSR

SOURCE--UKRAINS'KII FIZICHNII ZHURNAL, VOL. 15, APR. 1970, P. 648.  
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--LOW FREQUENCY, BEAM PLASMA INSTABILITY, INHOMOGENEOUS PLASMA,  
MAGNETIC FIELD, NATURAL GAS, LOW FREQUENCY OSCILLATION, ELECTRIC FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0719

CIRC ACCESSION NO--AP0126431

UNCLASSIFIED

STEP NO--UR/0185/70/015/000/0648/0648

CIRC ACCESSION NO--AP0126431  
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--04DEC70

ABSTRACT. EXPERIMENTAL RESULTS FOR THE LOW FREQUENCY INSTABILITY OF A PLASMA FORMED BY A TUBULAR ION BEAM WHICH TRAVELS ALONG A MAGNETIC FIELD THROUGH THE NATURAL GAS. A CHARACTERISTIC FEATURE OF THIS PLASMA IS THAT IT HAS INTERNAL AND EXTERNAL BOUNDARIES WITH MUTUALLY OPPOSED DENSITY GRADIENTS ALONG THE RADIUS AND AN UNCHANGED ORIENTATION OF THE ELECTRIC FIELD ARISING FROM INCOMPLETE COMPENSATION OF THE ION BEAM'S SPACE CHARGE. LOW FREQUENCY OSCILLATIONS ARE DETECTED IN THE PLASMA, WITH THE AMPLITUDE MAXIMA LOCALIZED IN REGIONS OF BOTH THE POSITIVE AND NEGATIVE RADIAL DENSITY GRADIENTS. THE RESULTS OBTAINED ARE IN AGREEMENT WITH THE THEORY FOR THE STABILITY OF AN INHOMOGENEOUS PLASMA IN CROSSED ELECTRIC AND MAGNETIC FIELDS.

FACILITY: AKADEMIIA NAUK UKRAINS'KOI RSR,  
INSTITUT FIZIKI, KIEV, UKRAINIAN SSR.

UNCLASSIFIED

USSR

UDC 533.9:538.561

GABOVICH, M. D., SOLOSHENKO, I. A., PROTSENKO, I. M., TOVMACHENKO, V. N.  
and KOLOCHKO, V. N.

"Low-Frequency Oscillations in Plasma Formed by an Ion Beam"

Minsk, Kolebaniya i Volny v Plazme. (Oscillations and Waves in a Plasma),  
"Nauka i Tekhnika," 1971, pp 61-64

**Abstract:** In a plasma formed by an ion beam, passing through a neutral gas along the magnetic field, the mean energy of the ions is higher than in ordinary gas discharges, comprising approximately 1 eV. The authors examine the case in which the plasma was formed by an ion beam having an energy of approximately 20 keV and a current of about 1 mA. They discuss the investigation carried out on the excitation of ion-cyclotron oscillations in plasma formed by a cylindrical beam; they are also concerned with the investigation of oscillations at lower frequencies in the plasma of a tubular ion beam. On the basis of the data which they obtained, the authors come to the conclusion that the instability generated in the heterogeneous plasma is largely due to the existence of a radial electric field crossed with a longitudinal magnetic field. The article contains 2 illustrations and 6 bibliographic entries.

1/1

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TITLE--HYDROGEN IN THE REGIONS OF FOUR STELLAR CLUSTERS -U-

UNCLASSIFIED

PROCESSING DATE--04DEC70

AUTHOR--TOVMASOIAN, P.M.

Y G

COUNTRY OF INFO--USSR, SWITZERLAND

SOURCE--THE SPIRAL STRUCTURE OF OUR GALAXY; PROCEEDINGS OF THE SYMPOSIUM,  
UNIVERSITAT BASEL, BASEL, SWITZERLAND, AUGUST 39-SEPTEMBER 4, 1969.  
DATE PUBLISHED----70

SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PRELIMINARY RESULTS OF OBSERVATIONS  
OF THE HYDROGEN LINE IN THE REGIONS OF FOUR YOUNG CLUSTERS OF O TYPE FOR  
THE PURPOSE OF REVEALING THE GAS CLOUDS ASSOCIATED WITH THEM. THE  
OBSERVED AREA IN EACH CASE EXCEEDS THAT OF THE CORRESPONDING CLUSTERS BY  
SEVERAL HUNDRED TIMES. THE RESULTS ON CLUSTERS NGC 2264, NGC 2353, NGC  
2362, AND NGC 3293 ARE PRESENTED.  
ASTROFIZICHESKAIA OBSERVATORIIA, YEREVAN, ARMENIAN SSR.  
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USSR

TOVMASYAN, N. Ye.

UDC: 517.946.9

"A Method for Solving Boundary Value Problems for Elliptical Systems of Second-Order Differential Equations in a Plane"

Moscow, Matematicheskiy Sbornik, No 12, 1972, pp 599-615

Abstract: The following elliptical system of second-order differential equations is considered:

$$A_0 u_{xx} + A_1 u_{xy} + A_2 u_{yy} = 0, \quad (1)$$

where  $A_0$ ,  $A_1$ , and  $A_2$  are constant square matrices of order  $n$ , and a solution in the form of  $u = u_1(x,y), \dots, u_n(x,y)$  is sought. The coefficients of system (1) above are, generally speaking, complex numbers, and the solution is sought in a class of complex vector functions. The author proposes a new method for solving the Dirichlet problem for the system through which that problem can be reduced to a solution of the Fredholm equation. The method is illustrated by solving the external Dirichlet problem; it can also be used for solving other boundary value problems as well.

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USSR

UDC 669.71:621.035

TOVSTENKO, A. F., CHALIK, S. M., GORELIK, A. Ya., LITVINOV, Ye. V., SVERDLIN,  
V.A.

"Study of New Types of Raw Materials for the Production of the Anode Mass"

Tr. Vses. N-i. i Proyektn. In-ta. Alyumin., Magn. i Elektrodn. prom-sti [Works  
of All-Union Scientific Research and Planning Institute of the Aluminum, Magne-  
sium and Electrode Industry], 1970, No. 71, pp. 10-20. (Translated from Refera-  
tivnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G155 by the authors).

Translation: A description is presented of various carbon materials used in  
the production of anode mass. The task of their classification is stated. The  
stages in the development of the production of raw materials in the USSR and its  
study at the All-Union Institute for Aluminum, Magnesium and Electrode Industry  
are studied. The types of cokes and pitches studied are listed and briefly de-  
scribed, and their promise for utilization is estimated. A bibliography of  
published works performed by the Institute together with other institutions on  
the investigation of carbon-based raw material is presented.

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USSR

TOVSTENKO, A. I.

UDC 615.917

"Fractional Composition of Serum Proteins of Cats After Melprex Inhalation"  
V sb. Gigiyena primeneniya, toksikol. pestitsidov i klinika otravl. (Hygiene of  
the Application and Toxicology of Pesticides and the Clinical Aspects of  
Poisoning -- collection of works), vyp. 9, Kiev, 1971, pp 221-227 (from RZh-  
Farmakologiya. Khimoterapevticheskiye sredstva. Toksikologiya, No 2, Feb 72,  
Abstract No 2.54.613)

Translation: An increase in the  $\alpha_3$ -globulins 1 and 3 days after poisoning by 19% and 43% respectively, a decrease in albumins (on the third day) and an increase in total protein level (on the first day) were noted in cats in the case of single inhalation of melprex (I; guanidine derivative) in a concentration of 55 mg/m<sup>3</sup> (maximum tolerable) for 4 hours by electrophoretic investigation of the serum proteins. The shifts were of a reversible nature and by the 10th day of observation, the composition of the serum proteins was entirely normalized. In mice subjected to the effect of I in a concentration of 48 mg/m<sup>3</sup>, sections of inflammation and necrosis were detected pathomorphologically in the lungs after 1-3 days. By the 10th day these sections had noticeably regressed. In a chronic experiment with cats under the effect of I in a concentration of 1.4 1/2

USSR

TOVSTENKO, A. I., Gigiyena primeneniya, toksikol. pestitsidov i klinika otravl.,  
vyp. 9, Kiev, 1971, pp 221-227

mg/m<sup>3</sup> (threshold) for 4 months, an increase in the  $\alpha_1$ -globulins was discovered  
on the 30th, 60th and 120th days and  $\alpha_2$ -globulins on the 120th day, and a reduc-  
tion in the total protein and albumins was detected on the 120th day. These are  
considered to be the result of a decrease in the protein forming function of the  
liver.

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JSSK

TOVSTIK, P. YE.

UDC 539.3:534.1

"Stability of Shells of Rotation in the Linear Approximation"

V sb. Raschet prostranstv. konstruktsii. Vyp. 13 (Calculation of Three-Dimensional Structures. No. 13 -- Collection of Works), Moscow, "Stroizdat", 1970, pp 118-138 (from RZh-Mekhanika, No 3, Mar 72, Abstract No 3V411)

Translation: The linear problem of the stability of a convex shell of rotation in an axisymmetric momentless subcritical stress state is discussed. The dependence of the coefficients on the meridional coordinates is taken into account in the equations for local stability. An asymptotic method is applied for approximate integration of the stability equations. It is assumed that a large number of waves arise in the circular direction and the solution has an oscillating character in the meridional direction. Cases are identified in which the assumptions made concerning the nature of wave formation under bifurcation may be inapplicable. Formulas are obtained for the critical normal pressure for a shell in the form of an ellipsoid and for the torque for a convex shell of rotation. The formulas are different from known results obtained from the equations for local stability with constant coefficients and small terms of the order

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TOVSTIK, P. YE., Raschet prostranstv. konstruktsii. Vyp. 13, Moscow, "Stroizdat", 1970, pp 118-138

$(h/R)^{1/2}$  for dents ( $h$  is thickness and  $R$  is the radius of curvature) located far from the edge, and  $(h/R)^{1/3}$  for dents close to the edge. In all cases the correction is toward the greater side. L. M. Kurshin.

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USSR

TOVSTIK, P. YE.

"Non-axisymmetrical Oscillations of Envelopes of Rotation with a Small Number of Waves on Parallels"

Issled. Po Uprugosti i Plastichnosti, No. 8, [Studies of Elasticity and Plasticity, No 8 -- Collection of Works], Leningrad, University Press, 1971, pp 131-140. (Translated from Referativnyy Zhurnal Mekhanika, No 1, 1972, Abstract No 1V248 by V. N. Moskalenko).

Translation: Asymptotic representations of the integrals of equations in the area of the rotation point and tip of cupola are constructed. The number of waves  $m$  on the parallels is considered rather low, so that the strong inequality  $m^2 \leq (12 R^2/h^2)^{1/4}$  is fulfilled (where  $R$  is the radius of the middle surface;  $h$  is the thickness). This allows the results produced earlier for axisymmetrical oscillations to be used. As an example, oscillations of a rather thin ( $h/R=0.004$ ) paraboloid envelope of rotation with rigidly clamped edge and rather low ( $m \leq 2$ ) wave numbers are studied.

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USSR

UDC: 539.3

LIYVA, T. V., TOVSTIK, P. Ye.

"On Stability in the Linear Approximation for Shells of Revolution With Negative Gaussian Curvature"

V sb. Probl. mekhan. tverd. deformir. tela (Problems in the Mechanics of a Deformable Solid—collection of works), Leningrad, "Sudostroyeniye", 1970, pp 231-238  
(from RZh-Mekhanika, No 9, Sep 70, Abstract No 9V101)

Translation: The authors consider the linear formulation of the problem of loss of stability in negatively curved shells of revolution which are closed in the peripheral direction as they are subjected to transverse and contour loads. It is assumed that the initial state is axisymmetric and momentless. With the aid of the asymptotic method of integration, based on the assumption that peripheral deformation predominates, the problem reduces to solution of an ordinary differential equation of second order with variable coefficients. Formulas for the upper critical load are derived for certain cases of loading and edge fastening. The relationship with the problem of nontrivial deformations of the middle surface of the shell is considered. A. V. Sachenkov.

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TITLE--PARAPROSTATIC NOVOCAINE ANTIBIOTIC BLOCKADE IN COMBINATION WITH  
HYDROCORTISONE IN THE COMPLEX THERAPY OF PROSTATITIS -U-

AUTHOR--(041-TOVSTOLES, K.F., SOKOVA, V.G., LOMYSKIN, A.I., SAMOYLOV, N.A.

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